MAYER BROWN & PLATT

MAYER, BROWN &
1909 K STREET, N.W.
WASHINGTON, D.C. 20006

Adam C. Sloane
Tel 202.263.3269
Fax 202.263.5269
asloane@mayerbrown.com

1909 K Street, N.W. · Washington, D.C. 20006-1101
Main Tel 202.263.3000

Charlotte Chicago Cologne Houston London Los Angeles New York Washington

ERIKA Z. JONES
DIRECT DIAL (202) 263-3232
DIRECT FAX (202) 263-5232
ejones@mayerbrown.com

MAIN FAX
202-263-3300

NHTSA-01-8876-4

March 23, 2001

VIA HAND DELIVERY

L. Robert Shelton
Executive Director
National Highway Traffic Safety Administration
Room 5220
400 Seventh Street, S.W.
Washington, D.C. 20590

Re: Petition for Rulemaking to Amend 49 C.F.R. Part 571.224, *Rear Impact Protection*

Dear Mr. Shelton:

Enclosed for filing please find one original and two copies of a joint Petition for Rulemaking submitted by Dan Hill and Associates, Inc. ("Dan Hill"), and Red River Manufacturing, Inc., A Division of Trail King Industries, Inc. ("Red River") (collectively, "Petitioners"). In the petition, Petitioners request that the agency commence a rulemaking respecting the amendment of Federal Motor Vehicle Safety Standard No. 224, *Rear Impact Protection*, to expressly exclude construction controlled horizontal discharge semitrailers from the scope of the standard. Together, Petitioners manufacture virtually all of the construction controlled horizontal discharge semitrailers that are produced for the domestic market.

As Petitioners show in the attached petition, notwithstanding substantial expenditures of money and time, they have been unsuccessful in their independent efforts to locate or develop a rear impact guard that is compliant, functional, reliable, and capable of interfacing with the road-building equipment with which their semitrailers are designed to work. Petitioners' efforts in this regard have convinced them that, with respect to these semitrailers, compliance with Standard No. 224 is neither economically nor practically feasible. Thus, if Standard No. 224 is not amended, it is likely that production of the semitrailers for the domestic market will be permanently suspended. As a result, Petitioners will face considerable losses of revenues and income, many of their employees could lose their jobs, and the road construction industry would lose a valuable piece of equipment that allows for the controlled discharge of asphalt and other materials with less waste and greater safety than is provided by other equipment. As Petitioners also show, their proposed amendment of Standard No. 224 would have no measurable effect on

BEFORE THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

PETITIONERS:	**DAN HILL AND ASSOCIATES, INC. AND RED RIVER MANUFACTURING, A DIVISION OF TRAIL KING INDUSTRIES, INC.**	)
		) **DOCKET NO.**
RELIEF SOUGHT:	**AMENDMENT OF FEDERAL MOTOR VEHICLE SAFETY STANDARD NO. 224**	)

PETITION FOR RULEMAKING

DAN HILL AND ASSOCIATES, INC., and RED RIVER MANUFACTURING, A DIVISION OF TRAIL KING INDUSTRIES, INC., (collectively referred to as "Petitioners") file this Petition for Rulemaking with the Administrator of the National Highway Traffic Safety Administration ("NHTSA") requesting the commencement of a proceeding respecting the amendment of 49 C.F.R. §571.224, *Rear Impact Protection* ("Standard No. 224"). Petitioners request that Standard No. 224 be amended expressly to exclude construction controlled horizontal discharge semitrailers ("horizontal discharge trailers") from the scope of the standard.

This amendment is necessary because, notwithstanding expenditures of substantial amounts of time and money, Petitioners have been unable to find or develop an underride protection system that is safe, functional, and commercially acceptable for horizontal discharge trailers that are used primarily in road construction and paving operations. A requirement that Petitioners and other manufacturers of horizontal discharge trailers comply with Standard No. 224, as currently written, would likely result in the permanent suspension of the production of horizontal discharge trailers for the domestic market. As a result, Petitioners would suffer a considerable loss of revenue and income, many of their employees would face the loss of their

jobs, and the road construction industry would lose a valuable piece of equipment that allows for the controlled discharge of asphalt and other materials with less waste and greater safety than is provided by other equipment.

Because of the small number of trailers that would be subject to the exemption sought here, the grant of this petition would have no measurable effect on highway safety. Petitioners are aware of no rear end collisions involving horizontal discharge trailers that have resulted in injuries or the intrusion by a horizontal discharge trailer into the passenger compartment of a vehicle colliding with the rear of such a trailer.

Background

Petitioners manufacture and sell horizontal discharge trailers that are used in the road construction industry, primarily to deliver asphalt (and other road building materials) to construction sites. These trailers use a mechanical drive to effect a controlled off-loading of asphalt and other road building materials – primarily into paving machine hoppers. The principal competitor to horizontal discharge trailers is the steel end dump trailer. (Because of their "wheels-back" design, most end dump trailers are excluded from the underride requirements of Standard No. 224.)

Horizontal discharge trailers have a number of advantages over end dump trailers. Horizontal discharge trailers provide for a controlled, mechanical off-loading of their contents while remaining horizontal. This permits contractors to determine the rate of the flow of asphalt and other building materials, preventing spills and controlling the pace of their construction and paving operations. End dump trailers, by contrast, discharge their cargo by raising the front side of the trailer bed into the air. This method of off-loading relies on gravity and, therefore, is far less controlled than is the mechanical method used by horizontal discharge trailers.

In addition, the design of horizontal discharge trailers reduces asphalt material segregation during transportation. The avoidance of material segregation in the haulage of asphalt is particularly important to the road-building industry.

Horizontal discharge trailers also are insulated. This insulation allows contractors additional time to load and unload asphalt before it begins to set.

Horizontal discharge trailers also are safer than end dump trailers. As noted above, the trailer beds of end dump trailers have to be raised in order for their cargo to be off-loaded by gravity. This makes the use of end dump trailers problematic, and possibly dangerous, on uneven terrain or where bridges, power lines, or other overhead obstacles are present. Horizontal discharge trailers, by contrast, can safely be used in such locations, because the trailers do not rise to discharge their contents, thus avoiding overhead obstacles and presenting a reduced tip-over risk.

Despite these advantages, Standard No. 224 may preclude the continued manufacture of horizontal discharge trailers for the domestic market, because it has not been feasible to design a compliant rear impact guard that can be used in road building and paving operations. As noted above, during the road building process, controlled horizontal discharge trailer are used primarily to discharge asphalt into a lay down machine ("paver") which overlays the road surface. Typically, the paver has hydraulic arms that lock into the trailer's rear wheels.

Because of the method by which pavers interface with trailers, and because of the variability in the heights of the paver hoppers that are found in road building and paving operations around the country, Petitioners have been unable to design reliable, functional, commercially acceptable rear underride guards for construction horizontal discharge trailers. Thus, for instance, a fixed rear impact guard cannot be used with asphalt pavers because it would prevent the hoppers from locking into, or otherwise interfacing with, the trailers. As set forth below, and in the recent petitions for temporary exemptions filed by Petitioners, substantial

efforts to design a reliable, functional, and commercially acceptable *retractable* guard have also proven fruitless despite expenditures of significant resources to attempt to design a compliant system.[1]

Facts

Petitioners submit the following facts in support of the Petition for Rulemaking:

1. **Flow Boy.** Petitioner Dan Hill and Associates, Inc., d/b/a Flow Boy Manufacturing ("Flow Boy"), Post Office Box 720660, Norman, Oklahoma 73070, is a corporation incorporated under the laws of the State of Oklahoma.

2. **Red River.** Petitioner Red River Manufacturing, A Division of Trail King Industries, Inc. ("Red River"), 202 8th Street West, Post Office Box 732, West Fargo, North Dakota 58078, is a corporation incorporated under the laws of the State of South Dakota.

3. **Application of Standard No. 224 to Petitioners' Trailers Will Not Significantly Advance the Purpose of the Standard.** Standard No. 224, which went into effect on January 26, 1998, requires that all trailers with a GVWR of 4,536 kg or more, including Petitioners' horizontal discharge trailers, be fitted with a rear impact guard that conforms to Federal Motor Vehicle Safety Standard No. 223, *Rear Impact Guards*. *See* 49 C.F.R. § 571.224. The purpose of Standard 224 "is to reduce the number of deaths and serious injuries occurring when light duty vehicles impact the rear of trailers." *Id.* at S2.

---

[1] Red River Manufacturing, which manufactures a variety of product lines besides construction horizontal discharge trailers has successfully designed compliant underride protection systems for its other product lines, including for its agricultural horizontal discharge trailers. Thus, Red River was able to design a compliant fixed rear guard for its Super Transfer trailers, which are designed to discharge their contents onto the ground, rather than into hoppers, because a fixed rear guard does not compromise the functionality of this product line. Similarly, Red River was able to utilize a fixed rear guard on its bottom dump trailers. As for the Red River horizontal discharge trailers that are designed for the agricultural industry, Red River was able to redesign them as "wheels back" trailers. This was feasible for the agricultural product line because a twelve-inch overhang with a rotating chute can be utilized with agricultural hoppers. Unfortunately, because of variability in the clearances required by the many different kinds of

Petitioners contend that application of this standard to the controlled horizontal discharge trailers will not significantly advance the purpose of the Standard because of the following:

A. **Small Number of Controlled Horizontal Discharge Trailers.** Because of low production numbers, there are very few trailers of this type on the highways today. Less than .12% of the trailers produced in the United States annually are controlled horizontal discharge trailers.

B. **Limited Highway Use.** Because of the proximity of hot mix plants to road construction sites the trailers spend very limited amounts of time on the highways. Accordingly, the likelihood of this type of trailer being involved in a rear-end collision on the highway is extremely minimal. The average time spent on the open road is quite small because the asphalt material is typically delivered to a construction project located within a half hour to an hour from the quarry or plant.

C. **Proximity of Axle and Tires.** The location of the rear-most axle and the accompanying tires place the maximum forward movement of a motor vehicle involved in a rear-end collision at 33" for Flow Boy's trailers and 24" for Red River's. Accordingly, the tires and axle act as a buffer and greatly reduce the likelihood that any part of the trailer will strike the vehicle's windshield or penetrate the interior of the vehicle.

4. **Compliance with Standard No. 224 Is Not Economically Feasible**. Compliance with Standard No. 224 is not economically feasible. First, to the extent that compliance is technically feasible at all (*see* Section 5, below), it would require Petitioners to incur great expense in redesigning their controlled horizontal discharge trailers. Second, because any feasible guard would have to be utilize a complex retractable design and be manufactured to exacting standards, the addition of a rear impact guard would greatly increase the cost of controlled horizontal discharge trailers, making it far more difficult for controlled horizontal discharge trailers to compete with conventional dump trucks. And third, the addition of a rear impact guard would make controlled horizontal discharge trailers even heavier than they now are, which would result in reduced payloads and increased costs to the contractors who use them.

---

pavers used in the road construction industry, a similar redesign is not feasible for the construction horizontal discharge trailers at issue in this petition.

5. **Compliance with Standard No. 224 Is Not Practically Feasible**. As noted above, Red River and Flow Boy – independently of one another – have concluded that it would not be feasible to use a fixed rear impact guard on construction horizontal discharge trailers, because such guards would prevent the trailers from working with pavers in road building and paving operations. Accordingly, Petitioners, also independently of each other, have explored whether it would be feasible to employ a retractable rear impact guard. Such a retractable guard would be engaged when the trailers are traveling to and from construction sites, and they would be retracted when the trailers are working with pavers at construction or paving sites. Unfortunately, Petitioners have not been able to locate an outside source that could supply a functional, reliable, commercially acceptable retractable guard, and they have been unable to engineer a successful design internally.

A number of obstacles to the development of a retractable guard have proven insurmountable. First, asphalt and dirt tend to accumulate on the guard. This causes maintenance problems and adds weight to the trailers.

In addition, the trailer must have adequate clearance to off-load asphalt into the paver hopper. Without adequate clearance, the hot mix asphalt has a tendency to fall onto the ground. This creates safety issues, as well as waste and maintenance problems. Clearance problems have proven extremely difficult for Petitioners because paver hoppers are not standardized and their configurations and heights are subject to change as manufacturers alter and update their designs. Thus, hopper openings of paver hoppers can vary between thirty-one inches and close to thirty-five inches above the ground (*see* attached pictures showing varying heights of paver hoppers), and are configured so that the trailer conveyor must extend twenty inches into the hopper for the discharge of asphalt. Because the conveyor structures of horizontal discharge trailers are generally thirty-six to thirty seven inches off the ground, the bumper portion of the retractable guard

can be no more than four inches deep to work with the shortest of the paver hoppers, and even then the guard must retract *completely* against the conveyor structure in order for the horizontal discharge trailer to be able to off-load into thirty-two inch hoppers. Since Standard No. 223 effectively requires the energy absorption to occur through a range of deformation of four inches, the retractable guard cannot work at all with the taller pavers. Moreover, achieving the retraction necessary to work with the smaller pavers, while meeting the strength requirements of Standard No. 223, has proven infeasible.

Another design difficulty has involved the location of the planetary gearbox that drives the conveyor system. As currently designed, the gearbox is located where the retractable guard would also have to be located.

In addition, the adoption of a retractable guard presents major manufacturing challenges. The manufacture of a functional retractable guard would prove very difficult because the guard's pivot points would have to be aligned consistently and with great precision.

6. **Amendment of Standard No. 224 Is in the Public Interest**. The public will benefit from the proposed amendment of Standard No. 224. The amendment would preserve the viability of horizontal discharge trailers, which, as noted, are safer and more commercially versatile than their chief rival, the steel end dump trailer, which generally qualifies for an exclusion from Standard No. 224 because of its "wheels back" design.

Failure to amend the standard would likely the eliminate the production of controlled horizontal discharge trailers for the domestic market. Without the controlled horizontal discharge trailer, the road construction industry would lose a safe alternative to conventional end dump trucks for the hauling of hot mix asphalt and other road building materials. Accordingly, the likelihood of workers' on-the-job injuries would increase. Moreover, the quality of roads would be adversely affected if conventional dump trucks

were the only available means of hauling hot mix asphalt and other road building materials. The use of end dump trailers have a number of significant disadvantages:

A. their uncontrolled unloading of materials can result in the accidental discharge of materials and the overloading of the paver hopper;

B. they fail to prevent the segregation of aggregate road building material, which is a serious problem for road builders and pavers;

C. they are typically unable to deliver hot mix asphalt in a workable condition over long distances; and

D. they are subject to tip-overs and inadvertent (and dangerous) contacts with power lines, bridges, and other overhead obstructions.

Proposed Order to be Issued by NHTSA

Because compliance with Standard No. 224 by construction horizontal discharge trailers is not feasible and because application of the standard to construction horizontal discharge trailers is not in the public interest, Petitioners request the amendment of 49 C.F.R. §571.224 Motor Vehicle Safety Standard No. 224; *Rear Impact Protection*, to add the following language:

> S3. Application. This standard applies to trailers and semitrailers with a GVWR of 4,536 kg or more. The standard does not apply to pole trailers, pulpwood trailers, ***controlled horizontal discharge semitrailers,*** special purpose vehicles, wheels back vehicles, or temporary living quarters as defined in 49 CFR 529.2....
>
> S4. Definitions. ***Controlled horizontal discharge semitrailer means a trailer that can interface with road-building/paving equipment and is designed primarily for the transportation and mechanized, controlled horizontal discharge of asphalt and other road building materials for the road-building industry.***

Conclusion

For the reasons set forth in this petition, Petitioners respectfully request that Federal Motor Vehicle Safety Standard No. 224 be amended to exclude construction horizontal discharge semitrailers from the scope of Standard No. 224. The application of Standard No. 224 to construction horizontal discharge trailers will not significantly advance the purposes of the

standard. The proposed amendment, however, will preserve the domestic production of trailers that are valuable to the road construction industry.

Dated this 23RD day of March 2001.

Respectfully Submitted,

Terry D. Hill, President
Dan Hill and Associates, Inc.

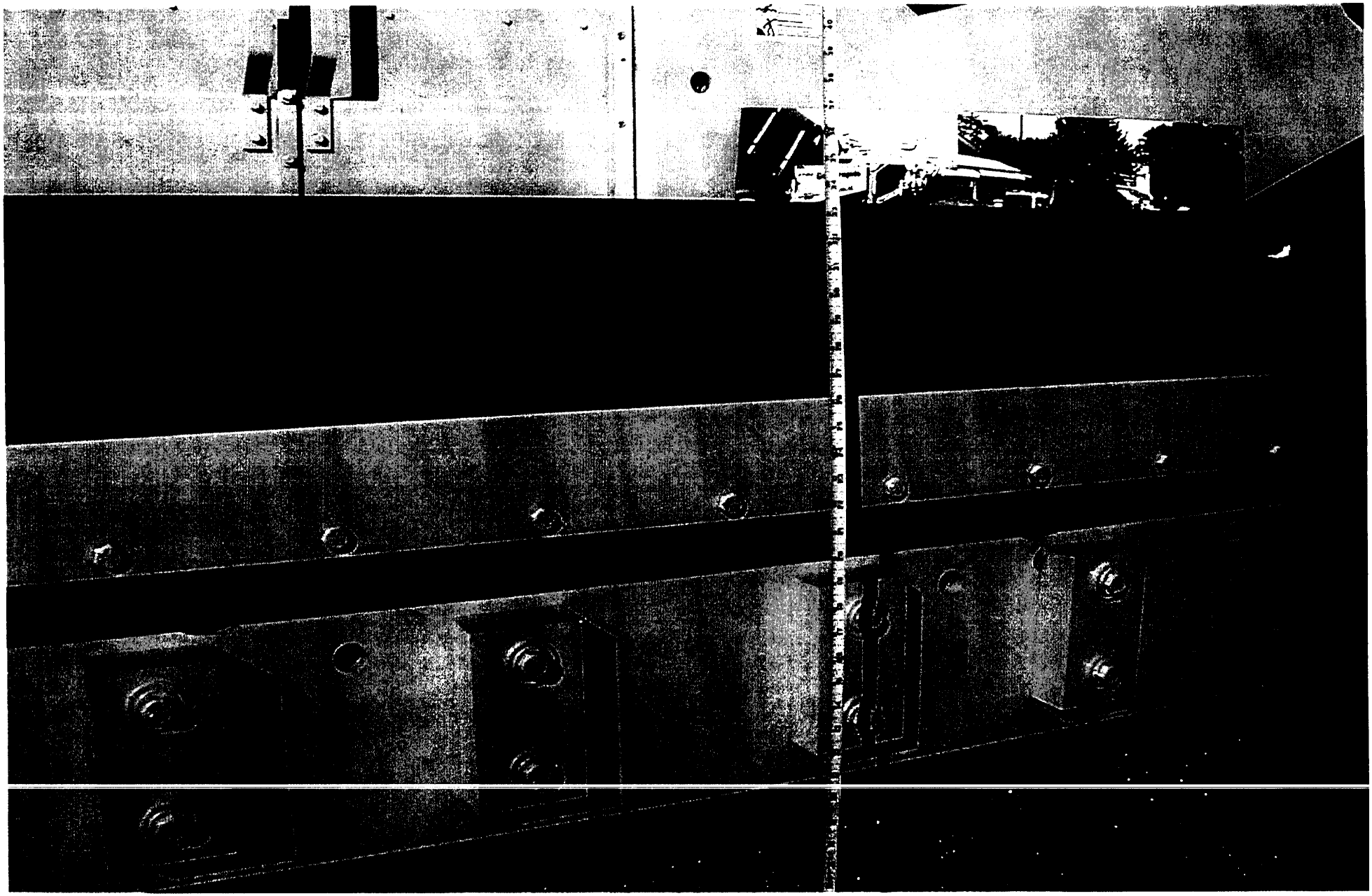
James R. Thibert/acs

James R. Thibert, Vice President Operations
Red River Manufacturing, A Division of
Trail King Industries, Inc.

PAVER MANUFACTURER

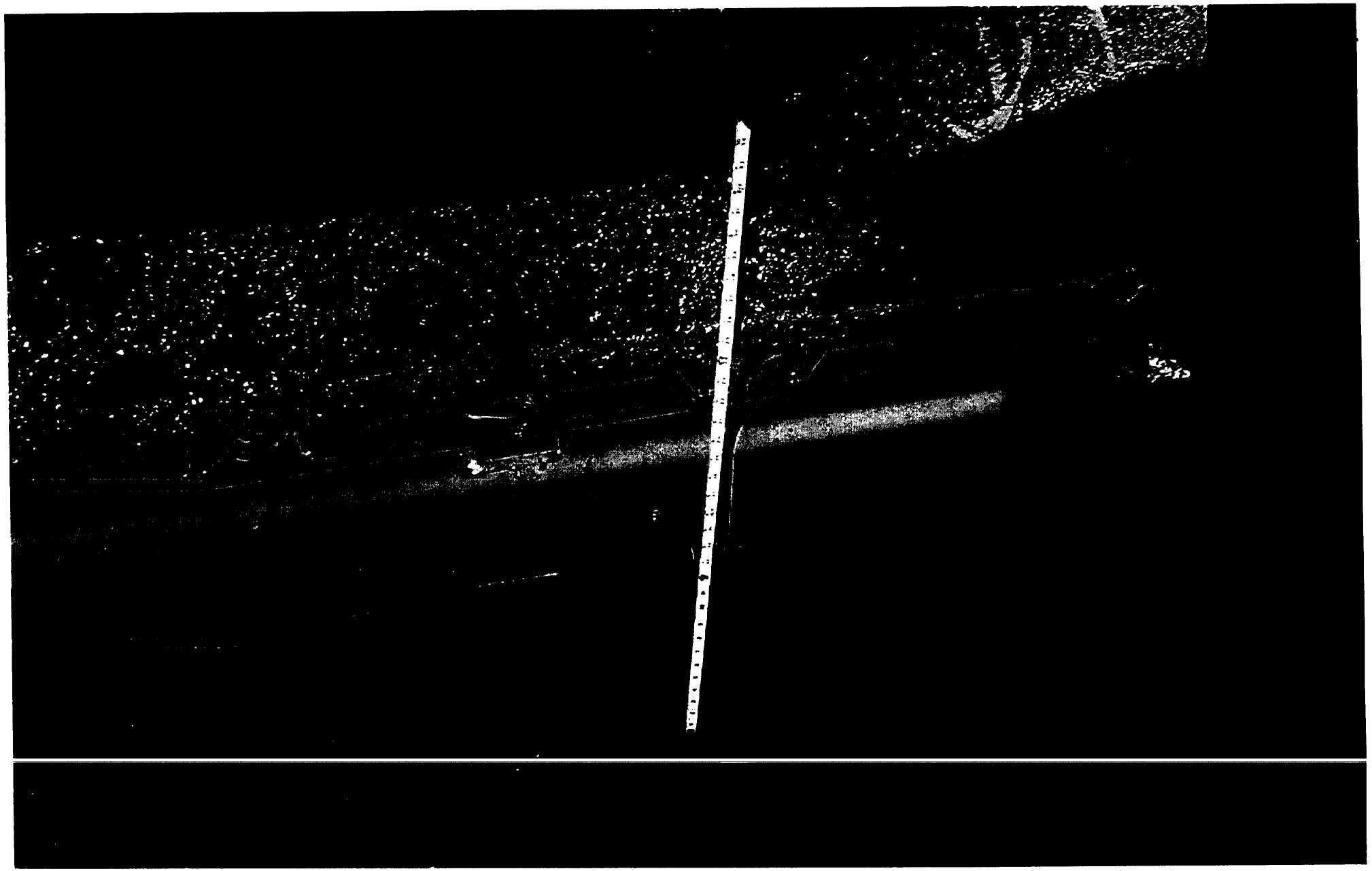
NAME: Cedarapds, Inc.
ADDRESS: 916-16th Street, NE , Cedar Rapids, IA 52402
TELEPHONE: 319-363-3511

HOPPER HT: 34"



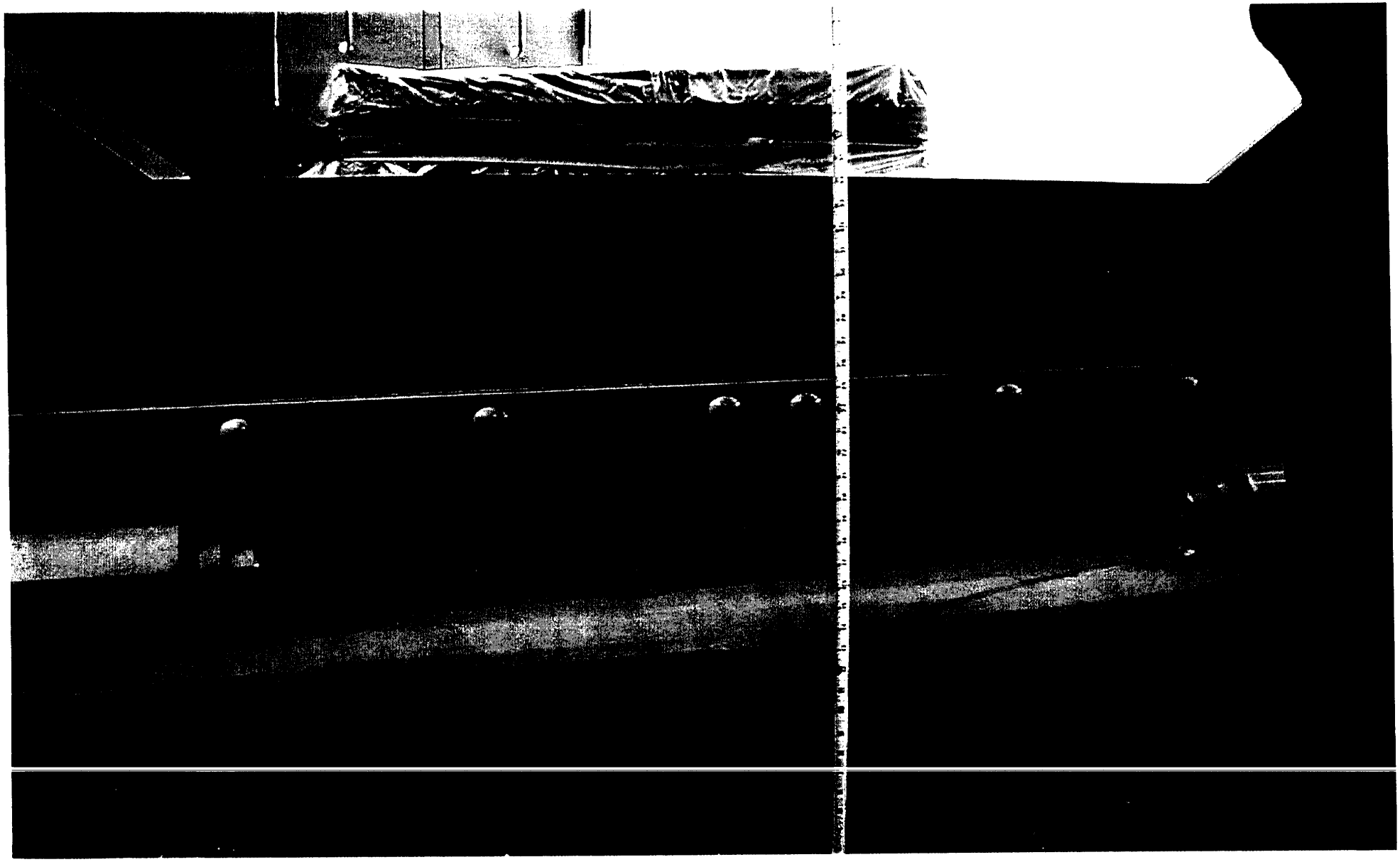
PAVER MANUFACTURER

NAME: Blaw-Knox Construction Equip.
ADDRESS: 750 Broadway Ave. E., Mattoon, IL 61938
TELEPHONE: 217-234-8811
HOPPER HT: 34"



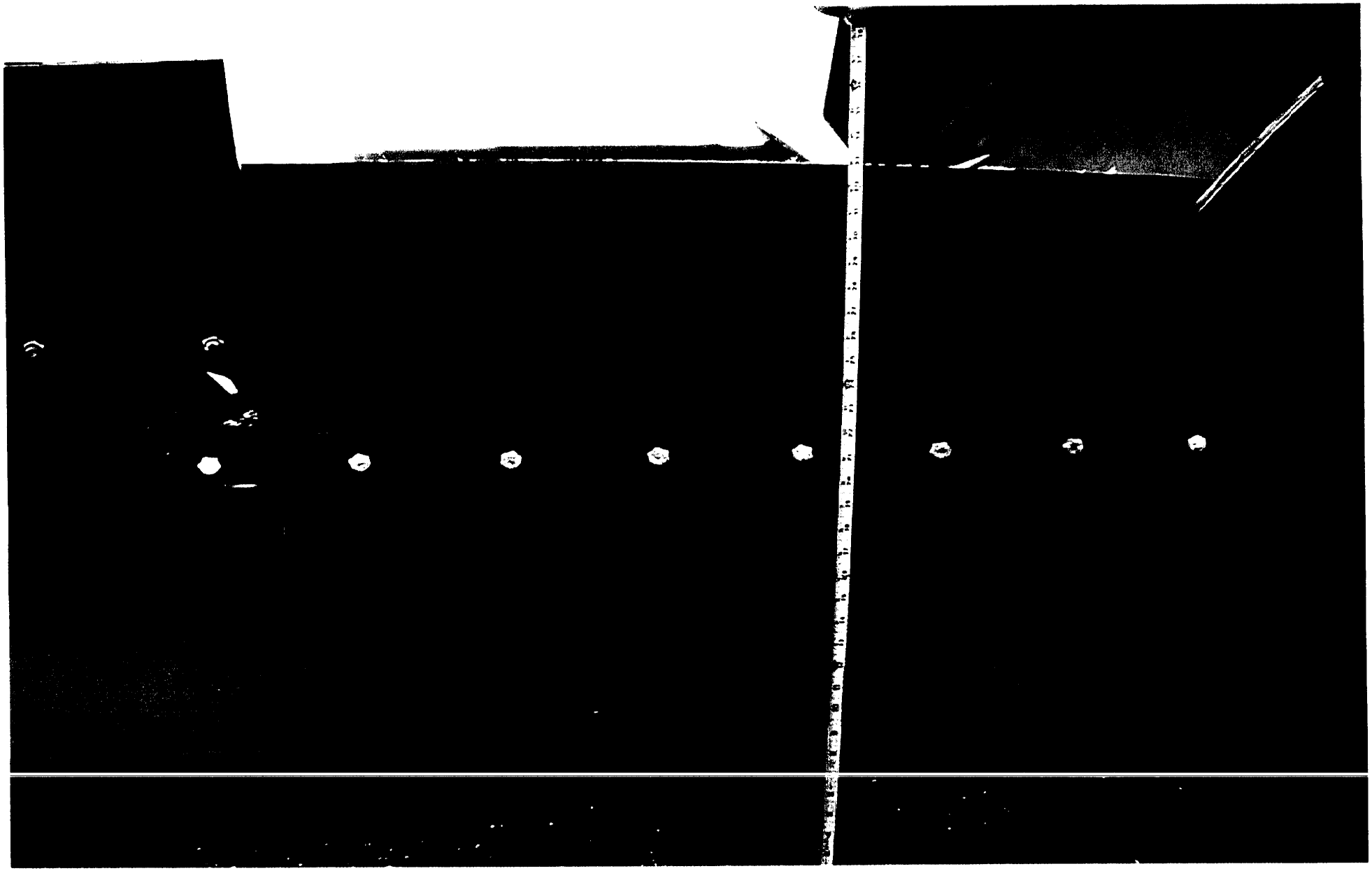
PAVER MANUFACTURER

NAME: Caterpillar Paving Products
ADDRESS: 8700 109th Avenue N., Suite 418
Champlin, MN 55316
TELEPHONE: 612-712-3001
HOPPER HT: 34 1/2"



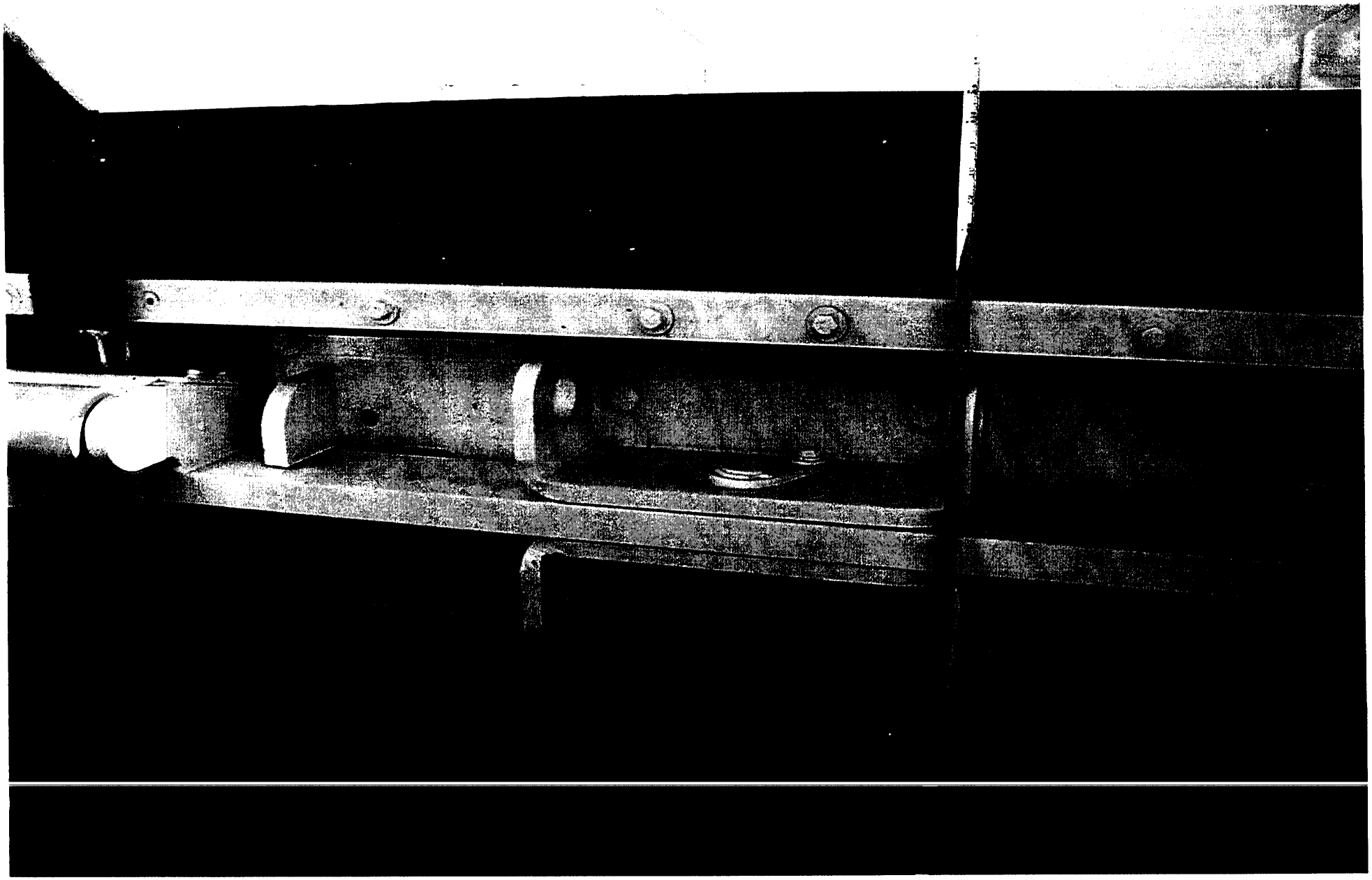
PAVER MANUFACTURER

NAME: Dynapac Compaction & Paving
ADDRESS: P.O. Box 615, Schertz, TX 78514
TELEPHONE: 210-474-5770
HOPPER HT: 33"



PAVER MANUFACTURER

NAME: Roadtec, Inc.
ADDRESS: 800 Manufacturers Road, Chattan
TELEPHONE: 423-265-0600
HOPPER HT: 33"



PAVER MANUFACTURER

NAME: Pro-Pav Asphalt Pavers
ADDRESS: 1445 Sheffler Drive, Chambersburg, PA 17201
TELEPHONE: 717-264-3200
HOPPER HT: 31"